

Unresolved Issues – LASE/FSU modeling investigations for CAMEX-5

Studies designed to investigate crucial role of water vapor on hurricane development

- How are forecasts of hurricane track and intensity improved by
 - directing aircraft to specific locations to acquire data in critical regions identified by models (adaptive observations)?
 - using models with higher vertical and horizontal resolutions to exploit high resolution LASE data?
 - modifying data assimilation and models to more fully use LASE (and other) data in the upper troposphere?
 - combining large-scale, low resolution passive (Aqua) with small-scale, high resolution active (LASE) remotely sensed profiles of water vapor?
- Hurricane Genesis - examine the organization of convection using high resolution mesoscale models
 - (small scale) dense coverage of data sets (LASE, MTP, dropsondes) over 3-4 days from suite of aircraft – design specialized flight tracks (DC-8, ER-2, P-3, G-IV) for optimal measurements
 - (large scale) satellite observations (GOES, TRMM, DMSP, Aqua, ...)
- Evaluation/Validation of data sets
 - in situ and remote – dropsondes, radiosondes, Aerosonde
 - satellite sensors
 - MODIS (Terra, Aqua), MISR, AIRS/AMSU, others in “A” train